FLUOTITANIC ACID 60% SOLUTION

SECTION 1. IDENTIFICATION

Product name : FLUOTITANIC ACID 60% SOLUTION

Product code : 2200847-0600-5-000

Manufacturer or supplier's details

Company name of supplier : Atotech Deutschland GmbH

Address : Erasmusstrasse 20
Berlin 10553
Germany

Telephone : +4930349850

Company name of supplier : Atotech USA

Address : 1750 OVERVIEW DRIVE
ROCK HILL 29730
USA

Telephone : +18038173500

Prepared by
Product Safety Department (PSD): product-safety@atotech.com

Inquiries
Questions about content of Safety Data Sheets: product-safety@atotech.com

Emergency telephone : CHEMTREC +18004249300

Transport Medical : Rocky Mountain Poison Control Center: 303-623-5716

Recommended use of the chemical and restrictions on use

Recommended use : Plating agents and metal surface treating agents
Surface treatment

Restrictions on use : For industrial use only.

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Corrosive to Metals : Category 1

Acute toxicity (Oral) : Category 3

Acute toxicity (Inhalation) : Category 3

Acute toxicity (Dermal) : Category 3

Skin corrosion : Category 1

Serious eye damage : Category 1

GHS Label element

Hazard pictograms :

Signal Word : Danger

Hazard Statements : H290 May be corrosive to metals.
H301 + H311 + H331 Toxic if swallowed, in contact with skin or if inhaled.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.

Precautionary Statements : **Prevention:**
P234 Keep only in original container.
P260 Do not breathe dust or mist.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER or doctor/ physician.
Storage:
P405 Store locked up.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Chemical nature : Aqueous solution

Hazardous ingredients

Chemical Name	CAS-No.	Concentration (%)
Titanate(2-), hexafluoro-, dihydrogen, (OC-6-11)-	17439-11-1	>= 60 - < 80
Hydrofluoric Acid	7664-39-3	>= 1 - < 2.5

This product may contain component (s) that are not listed under disclosure. All components not listed, do not contain hazardous materials above deminimus disclosure limits as defined by OSHA, NIOSH, ACGIH or Canadian WHMIS regulations and or guidelines. Please refer to other sections of the MSDS for information on safety, health and environmental guidelines and precautions.

SECTION 4. FIRST AID MEASURES

General advice : Call a physician or poison control center immediately.
Show this material safety data sheet to the doctor in attendance.

If inhaled : Call a physician or poison control center immediately.
Move to fresh air.

In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes.
Take off contaminated clothing and shoes immediately.
First treatment with calcium gluconate paste.
Consult a physician.

In case of eye contact : In case of contact, immediately flush eyes with plenty of water for at least 30 minutes.
Consult a physician.

If swallowed : If swallowed, call a poison control center or doctor immediately.
Never give anything by mouth to an unconscious person.
Do not induce vomiting without medical advice.

Most important symptoms and effects, both acute and delayed : Toxic if swallowed, in contact with skin or if inhaled.
Causes serious eye damage.
Causes severe burns.

Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing
No artificial respiration, mouth-to-mouth or mouth to nose. Use suitable instruments/apparatus.

Notes to physician : Health effects caused by fluorine, hydrofluoric acid and its mineral salts.
For specialist advice physicians should contact the Poison Control Center.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	:	No information available.
Hazardous combustion products	:	hydrogen fluoride
Specific extinguishing methods	:	Use a water spray to cool fully closed containers. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Special protective equipment for fire-fighters	:	Exposure to decomposition products may be a hazard to health. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust).
Environmental precautions	:	Should not be released into the environment. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up	:	Avoid formation of aerosol. Dam up. Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Clean contaminated floors and objects thoroughly while observing environmental regulations.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling	:	For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Handle in accordance with good industrial hygiene and safety practice. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid breathing mist or vapors.
Conditions for safe storage	:	Keep containers tightly closed in a dry, cool and well-

ventilated place.
Keep locked up or in an area accessible only to qualified or authorized persons.
May be corrosive to metals.

Recommended storage temperature : -5 - 40 °C

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Hydrofluoric Acid	7664-39-3	TWA	0.5 ppm (Fluorine)	ACGIH
		C	2 ppm (Fluorine)	ACGIH
		TWA	3 ppm 2.5 mg/m3	NIOSH REL
		C	6 ppm 5 mg/m3	NIOSH REL
		TWA	3 ppm	OSHA Z-2
		TWA	3 ppm (Fluorine)	OSHA P0
		STEL	6 ppm (Fluorine)	OSHA P0

Personal protective equipment

Respiratory protection : In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
In case of insufficient ventilation, wear suitable respiratory equipment.

Hand protection
Remarks : Wear protective gloves.The suitability for a specific workplace should be discussed with the producers of the protective gloves.Follow the instructions for use issued by the producer.

Eye protection : Tightly fitting safety goggles
Face-shield
Ensure that eyewash stations and safety showers are close to the workstation location.

Skin and body protection : Impervious clothing
Apron
Boots

Protective measures / Engineering measures : Ensure adequate ventilation, especially in confined areas.

Hygiene measures	:	Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using do not eat, drink or smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Color	:	colorless, light brown
Odor	:	No information available.
Odor Threshold	:	No data available
pH	:	< 2
Melting point/freezing point	:	not determined
Initial boiling point and boiling range	:	not determined
Flash point	:	Not applicable
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Not applicable
Upper explosion limit	:	No data available
Lower explosion limit	:	No data available
Vapor pressure	:	ca. 23 hPa (20 °C)
Relative vapor density	:	No data available
Density	:	1.58 - 1.68 g/cm3
Solubility(ies)		
Water solubility	:	completely miscible
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	No data available
Thermal decomposition	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available

Oxidizing properties : Not applicable

SECTION 10. STABILITY AND REACTIVITY

Reactivity : May be corrosive to metals.

Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous reactions : Gives off hydrogen by reaction with metals.
Potential for exothermic hazard

Conditions to avoid : To avoid thermal decomposition, do not overheat.

Incompatible materials : glass
Bases
Metals

Hazardous decomposition products : hydrofluoric acid

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
Inhalation
Ingestion
Eye contact
Skin Absorption

Acute toxicity

Toxic if swallowed, in contact with skin or if inhaled.

Product:

Acute oral toxicity : Acute toxicity estimate : 125 mg/kg
Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate : 4.55 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate : 250 mg/kg
Method: Calculation method

Ingredients:

Titanate(2-), hexafluoro-, dihydrogen, (OC-6-11)-:

Acute oral toxicity : Acute toxicity estimate : 100 mg/kg

Acute inhalation toxicity : Acute toxicity estimate : 0.5 mg/l

Acute dermal toxicity : Acute toxicity estimate : 300 mg/kg

Hydrofluoric Acid:

Acute oral toxicity : Acute toxicity estimate : 5 mg/kg

Acute inhalation toxicity	:	Acute toxicity estimate : 0.051 mg/l Exposure time: 4 h Test atmosphere: vapor
Acute dermal toxicity	:	Acute toxicity estimate : 5 mg/kg

Remark: The acute toxicity estimate (ATE) of the ingredients are derived using the LD50/LC50 values where available.

Skin corrosion/irritation

Causes severe burns.

Product:

Remarks: Extremely corrosive and destructive to tissue.

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Remarks: May cause irreversible eye damage.

Respiratory or skin sensitization

Skin sensitization: Not classified based on available information.
Respiratory sensitization: Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
OSHA specified	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

STOT-single exposure

Not classified based on available information.

STOT-repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

No data available

Persistence and degradability

No data available

Bioaccumulative potential

Ingredients:

Hydrofluoric Acid:

Partition coefficient: n-octanol/water	:	log Pow: -1.4

Mobility in soil

No data available

Other adverse effects

No data available

Product:

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	Dispose of in accordance with local regulations. Dispose of wastes in an approved waste disposal facility.
Contaminated packaging	:	Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14. TRANSPORT INFORMATION

International Regulation

UNRTDG

UN number	:	UN 2922
Proper shipping name	:	CORROSIVE LIQUID, TOXIC, N.O.S.
Technical name(s)		(Titanate(2-), hexafluoro-, dihydrogen, (OC-6-11)-, Hydrofluoric Acid)
Class	:	8
Subsidiary risk	:	6.1
Packing group	:	II
Labels	:	8 (6.1)

IATA-DGR

UN/ID No.	:	UN 2922
Proper shipping name	:	Corrosive liquid, toxic, n.o.s.
Technical name(s)		(Titanate(2-), hexafluoro-, dihydrogen, (OC-6-11)-, Hydrofluoric Acid)
Class	:	8
Subsidiary risk	:	6.1
Packing group	:	II
Labels	:	Corrosive, Toxic
Packing instruction (cargo aircraft)	:	855
Packing instruction (passenger aircraft)	:	851

IMDG-Code

UN number	:	UN 2922
Proper shipping name	:	CORROSIVE LIQUID, TOXIC, N.O.S.
Technical name(s)		(Titanate(2-), hexafluoro-, dihydrogen, (OC-6-11)-, Hydrofluoric Acid)
Class	:	8
Subsidiary risk	:	6.1
Packing group	:	II
Labels	:	8 (6.1)
EmS Code	:	F-A, S-B
Marine pollutant	:	no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation

DOT / 49 CFR

UN/ID/NA number	:	UN 2922
Proper shipping name	:	Corrosive liquids, toxic, n.o.s.
Technical name(s)		(Titanate(2-), hexafluoro-, dihydrogen, (OC-6-11)-, Hydrofluoric Acid)
Class	:	8
Subsidiary risk	:	6.1
Packing group	:	II
Labels	:	CORROSIVE, POISON
ERG Code	:	154
Marine pollutant	:	no

SECTION 15. REGULATORY INFORMATION

TSCA 5a : Not relevant

TSCA_12b : Not relevant

DEA : Not applicable

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

Ingredients	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Hydrofluoric Acid	7664-39-3	100	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

Ingredients	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Hydrofluoric Acid	7664-39-3	100	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 311/312 Hazards : Acute Health Hazard

SARA 302 : The following components are subject to reporting levels established by SARA Title III, Section 302:

Hydrofluoric Acid 7664-39-3

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Hydrofluoric Acid 7664-39-3

Massachusetts Right To Know

Hydrofluoric Acid 7664-39-3 1 - 2.5 %

Pennsylvania Right To Know

Hydrofluoric Acid 7664-39-3 1 - 2.5 %

New Jersey Right To Know

Hydrofluoric Acid 7664-39-3 1 - 2.5 %

California Prop 65 This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

Remarks: Components which are only displayed in Section 15 are being reported for local regulatory purposes. These components are not displayed in Section 3 due to one or more of the following conditions being met: being present in the product at concentration(s) below threshold limit values for reporting, not considered hazardous materials, health hazards or because they do not contribute to the overall GHS Classification of the final product as required by OSHA HazCom 2012 final rule (29 CFR 1910.1200).

Substances currently restricted by WEEE/RoHS (European Directive 2002/96/EC , 2002/95/EC) or ELV (European Directive 2000/53/EC):

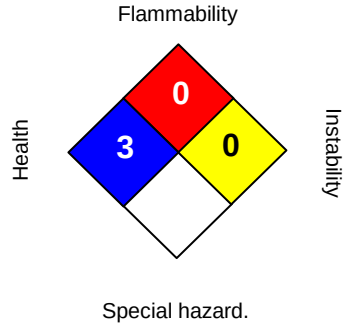
PBDE	PBB	CrVI	Hg	Pb	Cd
-	-	-	-	-	-

Please note: Current legislation restricting the use of certain substances applies to „homogeneous material“ in finished articles being supplied to the market. Substances deposited during surface finishing may have a composition (weight percent) higher than the weight percent of the substance in the operating solution from which the deposit is made. Atotech encourages its customers to implement systems to ensure their finished products comply with the regulations in force.

SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS III:

HEALTH	3
FLAMMABILITY	0
PHYSICAL HAZARD	0

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 05.05.2015

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

HIGH ENVIRONMENTAL HEALTH & SAFETY CONSULTING LTD.
An Affiliate of High Real Estate Group LLC

High Environmental Health & Safety Consulting
PO Box 10726
Lancaster, PA 17605-0726
(717)209-4045
HighEHS@high.net
http://www.highehs.com

Invoice 18478

BILL TO
Bridget Kleinz
BCI Surface Technologies, Inc.
1074 Stinson Dr.
Reading, PA 19605

DATE	PLEASE PAY	DUE DATE
08/14/2018	$1,100.00	09/13/2018

CONSULTANT
DR

PROJECT MGR
LDB

ACTIVITY	QTY	RATE	AMOUNT
IHS Follow-up Blender Hexavalent Chromium Personal Exposure Assessment at BCI Surface Technologies, Inc. on August 2, 2018.			
Incl - IHS Includes travel, on-site time, equipment use, sampling media, laboratory analysis, report development, Mileage, shipping & handling, and administration.	1	1,100.00	1,100.00
DR Services provided by Derek Robins, Safety & Health Technician			
News Visit our website www.highehs.com to register for our upcoming classes!			
Thanks Thank you for choosing High EH&S Consulting Ltd. for all your safety needs!			

PAST DUE

High EH&S Consulting Ltd.
EIN Number 23-2926484

TOTAL DUE $1,100.00

THANK YOU.

TERMS 1.8% after 30 days